

Claims

- [c1] 1. An optical component comprising:
an optical element;
a bench-attach surface that is used to connect the optical component to an optical bench; and
a bonder chuck engagement surface to which a bonder chuck attaches to manipulate the optical component for attachment to the bench.
- [c2] 2. An optical component as claimed in claim 1, wherein the optical component further comprises a mounting structure, the optical element being attached to the mounting structure.
- [c3] 3. An optical component as claimed in claim 2, wherein the optical component is plastically deformable to enable alignment of the optical element after attachment to the optical bench.
- [c4] 4. An optical component as claimed in claim 2, wherein the mounting structure further comprises optical element interface on which the optical element is attached.
- [c5] 5. An optical component as claimed in claim 1, further comprising two bonder chuck engagement surfaces on either lateral side of the optical element.
- [c6] 6. An optical component as claimed in claim 1, wherein the bonder chuck engagement surface is on a top surface of a foot portion, which has the bench-attach surface on a bottom surface.
- [c7] 7. An optical component as claimed in claim 1, wherein the optical component further comprises a mounting structure that comprises a base, an optical element interface, and at least one armature, extending between the base and the interface, and the bonder chuck engagement surface being on wing portion of the armature.
- [c8] 8. An optical component manipulation system, comprising:
an optical component comprising: an optical element, a bench-attach surface that is used to connect the optical component to an optical bench, and a bonder

chuck engagement surface to which a bonder chuck attaches to manipulate the optical component; and
a bonder comprising a chuck that engages the optical component at the bonder chuck engagement surface to place the optical component on the optical bench.

- [c9] 9. An optical component manipulation system as claimed in claim 8, wherein the bonder further comprises a chuck heating system to facilitate solder bonding of the optical component to the optical bench.
- [c10] 10. An optical component manipulation system as claimed in claim 8, wherein the optical component further comprises a mounting structure.
- [c11] 11. An optical component manipulation system as claimed in claim 10, wherein the mounting structure is plastically deformable to enable alignment of the optical element after attachment to the optical bench.
- [c12] 12. An optical component manipulation system as claimed in claim 10, wherein the mounting structure further comprises optical element interface on which the optical element is attached.
- [c13] 13. An optical component manipulation system claimed in claim 8, further comprising two bonder chuck engagement surfaces on either lateral side of the optical element.
- [c14] ¹⁴ 13. An optical component manipulation system as claimed in claim 8, wherein the bonder chuck engagement surface is on a top surface of a foot portion, which has the bench-attach surface on a bottom surface.
- [c15] ¹⁵ 14. An optical component manipulation system as claimed in claim 8, wherein the optical component further comprises a mounting structure that comprises a base, an optical element interface, and at least one armature, extending between the base and the interface, and the bonder chuck engagement surface is on wing portion of the armature.
- [c16] ¹⁶ 15. An optical component installation process, comprising:
picking an optical component with a chuck of a bonder at an engagement surface;

placing the optical component into engagement with an optical bench; and
activating a chuck heater to initiate a bonding operation between the optical
component and the optical bench.

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